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ABSTRACT

Assessments of institutional effectiveness in affirmative action tend to take either a simple, bottom-line approach (tracking number and percentage of female/minority faculty) or a sophisticated multiple regression-based approach (evaluating rank or salary equity). Either approach may obscure or overlook positive changes occurring within faculties. A multiple-criteria approach to evaluating institutional affirmative action effectiveness is recommended. A number of criteria that might be used are suggested, including: proportion of women/minorities with tenure or tenure-tracked appointments; proportion of women/minorities with full-time appointments; number of departments with female/minority representation; aggregate male-female/minority-non-minority salary difference; and average annual salary increase by race/sex. Improvements both in the level of female/minority faculty participation (representation) and in the distribution of women/minorities within the faculty should be evaluated. Contains 7 references. (Author/KM)

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Alternative Measures for Assessing Affirmative Action Effectiveness

by

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Teresa Karolewski
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Abstract

Assessments of institutional effectiveness in affirmative action tend to take either a simple, bottom-line approach (tracking number and percentage of female/minority faculty) or a sophisticated multiple regression-based approach (evaluating rank or salary equity). Either approach may obscure or overlook positive changes occuring within faculties. This paper encourages a multiple-criteria approach to evaluating institutional affirmative action effectiveness and suggests various criteria which might be used in such an approach. Improvements both in the level of female/minority faculty participation (representation) and in the distribution of women/minorities within the faculty should be evaluated.

Because much of the focus of affirmative action efforts in academe as well as other employment contexts is on recruitment and hiring processes (Hyer, 1983, p. 52), assessments of affirmative action progress have tended to emphasize numbers of employees. Year to year and institution to institution, the tandem questions "how many minority/female faculty" and "what proportion of total faculty" are asked and answered again and again. While there is a certain practicality to such bottom-line assessment, there is another practicality--given the often times slow progress evident in the bottom line--that encourages consideration of other criteria which might indicate affirmative action progress.

That the aggregate numbers on the bottom line may not tell the whole story has been noted before (Clare et al, 1978, p. 18). Unfortunately, reliance on aggregate numbers continues, in part, because of the tendency of administrators and affirmative action program personnel to be protective of detailed data. The concern is not without justification. Care must be taken to protect the privacy of the individuals who are the subjects of the data. And certainly, there is some risk that internal institutional data may be used against the institution in some future legal action. However, often this protectiveness is reinforced by uncertainty about what the underlying data would show and the assumption that they might reveal an even less favorable picture than the aggregate data. Yet, it is possible that the underlying data may reveal a more favorable picture.

Whatever the picture, it is important that administrators have accurate information about the distribution of women and minorities within the institution (Sells, 1974, p. 88) and for institutional researchers to assure that it is fully evaluated.* Data that show little or no improvement can be effective in demonstrating that continued affirmative action is needed, whereas data that show progress can constitute important positive feedback to faculty and administrators who have supported and engaged in affirmative action.

Literature

The literature on effectiveness of affirmative action in higher education emphasizes factors which contribute to or impede affirmative action effectiveness. Commonly, opinion survey and expert judgment are used to identify and weight the factors. Hitt, Keats, & Pardum (1983) identified thirteen factors as necessary to an effective affirmative action program based on judgments from a sample of personnel and affirmative action officers. Evaluating the effectiveness of affirmative action programs based on program elements and attributes is a process-oriented kind of evaluation.

*Institutional researchers and affirmative action officers share a common responsibility in this regard. Typically, the extensive data requirements associated with affirmative action plans and periodic compliance reviews forge a working relationship betweeen the IR and AA offices. But, it is not uncommon for relations between these offices occasionally to become strained under the burden of these requirements while coping with other workload demands. Cooperative development of AA data for internal evaluation may provide an opportunity to repair relations and improve communications between IR and AA staff.

Hyer (1985) used a case study or illuminative evaluation approach to identify factors thought to have facilitated successful implementation of affirmative action programs at three institutions. The institutions selected for study were chosen based on their high scores on a change index. The index "combined scores in five areas: change in the proportion of women on the faculty, change in the ratio of male to female faculty, change in the number of women on the faculty, change in the number of female full professors, and change in the number of tenured women" (p. 285). Based on cross-site comparisons, Hyer identified environmental and program factors that might have accounted for the positive changes evidenced by the institutions.

Multiple regression analysis of salary and rank differentials by gender or race, which determines the amount of variance explained by race or sex after the variance due to other factors has been controlled, is a goal-based evaluation approach. At issue is whether or not the intended outcome of affirmative action has been achieved--i.e., that race and sex not be significant factors.

Multiple regression studies are better suited to periodic evaluations, especially of salary equity, than to routine affirmative action monitoring. Conceivably, regression coefficients for race and sex could be compared over repeated studies (see, e.g., Loeb, Ferber, & Lowry, 1978). However, because changes in the variables considered or in their

measurement can change the amount of explained variance attributed to each variable, cross-time comparisons would require a fixed regression model. Desirable changes in the model based on experience would have to be foregone or, if made, their potential compromise to comparability would have to be recognized.

The goal-based evaluation more typically used to monitor affirmative action compares the percent of faculty positions held by women or minorities either with their estimated availability (goal) or with earlier percentages (goal: improvement). This paper encourages the consideration of similar and other comparisons, but above the bottom line, in a multiple-criteria stategy of affirmative action assessment.

Broadly, affirmative action intends that women and minorities have the same opportunities as white males. Assuming that in a truly barrier-free world, women and minorities share similar interests, abilities, and motivations as white males, the outcome congruent with the broad goal of affirmative action in higher education would be proportional participation of women and minorities and similarity in their distributions, compared to white males, across faculty ranks, tenure status, disciplines, salary levels, etc. In assessing affirmative action effectiveness in higher education, then, we should look for both improved participation and greater distribution of women and minorities throughout the faculty structure.

Data

The base data shown in Table 1 were constructed for use in this paper. The data were constructed to be generally realistic in terms of general levels and patterns of women and minority

Table 1

Basic Employment Counts

	Tenured			Ten-Tracked			Other (NonTen-Tracked)			Total		
	Tot	Min	Fem	Tot	Min	Fem	Tot	Min	Fem	Tot	Min	Fem
PERIOD 1												
FT-Prof	315	14	20	5	0	0	5	0	0	325	14	20
Assoc	190	10	24	50	4	5	5	1	1	245	15	30
Asst	40	2	11	135	11	40	30	5	7	205	18	58
Inst	20	1	8	30	0	9	50	10	28	100	11	45
PT-Asst	0	0	0	0	0	0	25	1	7	25	1	7
Inst	0	0	0	0	0	0	100	6	40	100	6	40
PERIOD 2												
FT-Prof	322	14	21	5	0	0	8	1	0	335	15	21
Assoc	185	10	26	41	3	5	4	0	0	230	13	31
Asst	38	2	10	158	16	42	29	4	5	225	22	57
Inst	19	1	8	37	0	11	59	8	24	115	9	43
PT-Asst	0	0	0	0	0	0	35	3	12	35	3	12
Inst	0	0	0	0	0	0	110	7	46	110	7	46
PERIOD 3												
FT-Prof	305	16	23	8	0	0	7	0	1	320	16	24
Assoc	192	9	27	52	3	3	6	0	0	250	12	30
Asst	37	3	10	170	19	46	28	4	4	235	26	60
Inst	19	1	8	38	1	12	58	7	16	115	9	36
PT-Asst	0	0	0	0	0	0	40	4	14	40	4	14
Inst	0	0	0	0	0	0	115	5	51	115	5	51

faculty participation. However, depending on the reader's institutional experience, the female participation may appear low and the minority participation high, vice versa, or other combination.

Because the data were constructed by hand, building cross-tabulations of race and sex would have added considerable complexity to the task--and undue detail to the tables here. Thus comparisons are drawn between males and females and between minorities and non-minorities. The minority to non-minority comparisons are not as striking as would be comparisons between minorities and white males, because the non-minority figures are deflated by the white female "experience." In actual applications, one would want to distinguish and compare females, minorities, and white males.

"Results"

Table 2 shows that in these constructed data, in total, proportionately, the representation of women and minority faculty remained effectively unchanged over the three periods. This was

Table 2

Number and Percent of Female and Minority Faculty

	Total Faculty	Female #	Female %	Minority #	Minority %
Period 1	1000	200	20.0	65	6.5
Period 2	1050	210	20.0	69	6.6
Period 3	1075	215	20.0	72	6.7

by design to focus attention on improvements elsewhere than in the number and percent of faculty.

Female/Minority Rank Distribution. Representation has been such a dominant affirmative action issue that too often female/minority faculty data are considered only from the perspective of "percent of total." In focusing on female/minority faculty as a proportion rather than a population, improvements in the distribution of female/minority faculty can be overlooked.

For example, Table 3 shows the female faculty counts by rank from Table 1 represented as percentages of total (both sexes).

Table 3

Female Faculty by Rank As Percent of Total (Both Sexes)

	Tenured			Ten-Tracked			F-T Other (NonTen-Tracked)			Part-time		
	Per1	Per2	Per3	Per1	Per2	Per3	Per1	Per2	Per3	Per1	Per2	Per3
Prof	6.3	6.5	7.5	0.0	0.0	0.0	0.0	0.0	14.3	0.0	0.0	0.0
Assc	12.6	14.1	14.1	10.0	12.2	5.8	20.0	0.0	0.0	0.0	0.0	0.0
Asst	27.5	26.3	27.0	29.6	26.6	27.1	23.3	17.2	14.3	28.0	34.3	35.0
Inst	40.0	42.1	42.1	30.0	29.7	31.6	56.0	40.7	27.6	40.0	41.8	44.3

Visual inspection of these percentages suggests no major observations, other than a decline in female representation among full-time, nontenure-tracked faculty and an increase in female representation among part-time faculty.

Viewed only as areas of slippage, the decreases in numbers (Table 1) and percentages (Table 3) of female instructors and assistant professors in the nontenure-tracked category would be considered negative trends. But from the perspective of improved status of women faculty--in this context, more frequent appointment of women to regular faculty positions rather than marginal, low rank positions--the declines may be part of a favorable trend.

In looking for improvements in the ranks held by women/minority faculty, it is helpful to compute the mean rank for the various distributions of interest to permit easier comparison across periods. Computing separate means for tenured and full-time as well as total faculty assists in isolating where any improvement is occurring or, at least, assuring that the improvement is not limited to marginal appointment categories. Examination of the mean ranks computed from the constructed data, shown in Table 4, shows that although there is little change in average rank for total women, there is a modest increase in average rank for tenured women and a somewhat greater increase in average rank for full-time women, suggesting that the average rank for full-time, untenured women would be improved as well. These improvements in the constructed data are obscured in the overall average female rank by the growing number of women in low ranks in the part-time category.

While increased female/minority employment in entry-level ranks reflects improvement in female/minority participation, it

Table 4

Mean Rank: Female, Male, Minority, & Non-Minority Faculty

	Tot	F-T	Ten	Tot	F-T	Ten	Tot	F-T	Ten
	Female			Male			Difference		
Per1	1.93	2.16	2.89	2.89	3.07	3.48	-.96	-.91	-.59
Per2	1.92	2.20	2.92	2.82	3.00	3.50	-.90	-.80	-.58
Per3	1.96	2.28	2.96	2.78	2.95	3.48	-.82	-.67	-.52
	Minority			Non-Minority			Difference		
Per1	2.40	2.55	3.37	2.72	2.93	3.42	-.32	-.38	-.05
Per2	2.39	2.58	3.37	2.66	2.89	3.44	-.27	-.31	-.07
Per3	2.42	2.56	3.38	2.63	2.86	3.42	-.21	-.30	-.04

also contributes to the continued concentration of women--and to some extent minorities--in low ranks. In the short-run, at least, the more female/minority participation improves, the less the female/minority rank distribution is likely to improve. Thus, in some categories such as tenure-tracked, no change in average female/minority rank may be a good sign that increased hiring in entry-level ranks is being offset by improvements in higher ranks.

Even in the absence of any apparent improvement in rank status, there may be relative improvement in the ranks held by women/minority faculty compared to those held by male/non-minority faculty, because like the female/minority rank distribution the male/non-minority rank distribution is subject to change and effects from retirements, new hires, etc. Such relative improvement is seen in Table 4 in the comparative improvement

of the minority average rank vis-a-vis the average rank for non-minority faculty, both for total faculty and full-time faculty. In the figures for women, note that while the average rank for full-time faculty improves by slightly over 1/10 rank, from 2.16 to 2.28, its comparative improvement relative to male average rank is almost 1/4 rank, as the male-female gap closes from almost a full rank to within 2/3 rank.

Proportion of Women/Minorities with Tenure or Tenure-Tracked Appointments. Although tenure status may be considered a more reliable indicator of senior faculty status than rank (Hornig, 1980), neither is perfect because they share the same imperfect correlation: some full professors and more associate professors do not hold tenure while, in many settings, some tenured faculty hold assistant professor and even instructor rank. Nevertheless, holding tenure is a significant distinction among faculty, and proportion with tenure is a conventional measure for tracking change in the status of female/minority faculty. Like average rank, however, proportion of women/minorities with tenure resists short-term improvement if the female/minority base is increasing.

More likely--and more important--to improve is the proportion of women/minority faculty who are either tenured or holding tenure-tracked appointments. This proportion, which represents the proportion of women/minorities holding "regular" faculty appointment, also represents the upper limit of tenure-holding capacity in the female/minority faculty, which in turn

says something about the prospects of their with-tenure proportion rising. Also, the extent to which the male-female/minority-nonminority proportions differ has implications for whatever gap exists in with-tenure proportion to continue, assuming that males and females/minorities and nonminorities are equally tenureable. In other words, if, as in the case of the constructed data, latest data show (Table 5) that 80% of the male faculty are tenured or in tenure-tracked positions while only 60% of the female faculty hold such positions, then, the prospects are pretty good that the almost 25 percentage point gap between male and female faculty with tenure (56.4% vs. 31.6%) will continue--because the tenure-holding capacity of the male faculty is 20 percentage points greater than the female faculty.

Table 5

Proportion with Tenure or Tenure-Tracked Appointments: Female, Male, Minority & Non-Minority Faculty

	% Ten	% Ten & TT	% Ten	% Ten & TT	% Ten	% Ten & TT
	Female		Male		Difference	
Per1	31.5	58.5	62.8	83.5	-31.3	-25.0
Per2	31.0	58.6	59.4	81.2	-28.4	-22.6
Per3	31.6	60.0	56.4	80.5	-24.8	-20.5
	Minority		Non-Minority		Difference	
Per1	41.5	64.6	57.5	79.5	-16.0	-14.9
Per2	39.1	66.7	54.7	77.4	-15.6	-10.7
Per3	40.3	72.2	52.2	76.7	-11.9	-4.5

Proportion of Women/Minorities with Full-Time Appointment. Holding full-time appointment is generally thought to be a higher faculty status than holding part-time appointment. Lesser status attaches to part-time appointments for a number of reasons: typically the basis and level of pay are different than full-time; generally part-time faculty do not share in all the rights, duties, and benefits of full-time faculty; and often the line between part-time temporary instructors (PTTIs) and GTAs is thin and permeable.

Arguably, part-time appointment should not be considered low status, by definition, because some faculty hold such appointments for personal reasons and do not aspire to hold full-time appointment. Women, to some greater extent than men, may find part-time positions advantageous because of competing demands of marriage and family. However, there is no reason to expect that minorities and non-minorities would have different preferences for part-time appointment.

Perhaps a more important observation than proportion of women holding full-time appointment, absolute or relative to men, is any change in that proportion. In the constructed data, there is a substantial increase in number and percent of women in the part-time category, with a corresponding loss from the the full-time, nontenure-tracked category. Did women's preferences change or did they increasingly receive offers of part-time rather than full-time appointment?

Table 6

Proportion with Full-time Appointment: Female, Male, Minority, & Non-Minority

	Female	Male	Diff	Min	Non-Min	Diff
Per1	76.5	90.3	-13.8	89.2	87.4	1.8
Per2	72.4	89.6	-17.2	85.5	86.2	-0.7
Per3	69.8	89.5	-19.7	87.5	85.4	2.1

Female/Minority Distribution Among Disciplines. Although the constructed data were not developed sufficiently for examination in this and following sections, we know what normally the discipline data would show: for women, concentrations in the humanities, social sciences, education, and traditionally female disciplines such as home economics and nursing and sparse representation in other disciplines; for minorities, representation in some disciplines and no representation in others.

There are a number of strategies that can be utilized to track improvement in the distribution of women/minorities among disciplines. To start, departments with and without representation can be inventoried. The number of departments with representation can be monitored for increase or represented as a proportion of total departments to form an index of disciplinary integration. For minorities, simple presence probably would be the maximum feasible criterion for categorizing departments. However, for women, because of their greater number, the criterion might be raised to 20 or 30 percent before

categorizing a department as "integrated." (Housing research on neighborhood integration uses such criteria to define integrated neighborhoods.)

Alternatively, one might monitor representation in selected departments which represent nontraditional disciplines for women/minorities. For women, these might include broad fields such as engineering and agriculture as well as specific fields such as physics, chemistry, mathematics, economics, and accounting. For minorities, they might include broad fields such as business and agriculture as well as specific fields such as journalism, English, art, and music.

For women, one might monitor the proportion of women outside traditionally female departments or traditionally female and integrated departments.

Aggregate Salary Difference Between Female/Male and Minority/Non-Minority Faculty. Although institutions may be satisfied that aggregate salary differentials by race and sex can be explained by other factors, it is useful to monitor aggregate differences. As distributions of women and minorities improve--rank, tenure status, discipline, etc.--and increasingly resemble those of white male faculty, aggregate salary differences should decrease and eventually disappear. Thus, aggregate salary difference by race/sex can serve as a broad indicator of improvement.

Also, in the salary area, average salary increase for continuing faculty by race and sex may be tracked to establish whether women and minorities are receiving salary increases

comparable to white males. In essence, are women and minority faculty, in general, being found equally meritorious as white male faculty? If the institution's salary policy provides for a general percentage level of merit increase or a combination of merit and cost-of-living increases, overall (all ranks, all disciplines) averages by race and sex may be used. However, separate averages by rank and broad discipline may be necessary if the institution's salary policy provides for different increments by rank or for market adjustments in selected disciplines, given women's and minorities' different rank and discipline distributions.

Recruitment Data. Of course, data on annual faculty recruitment efforts provide an important source of affirmative action information. Although some of this information does not per se appear in either bottom-line numbers or numbers above the bottom line, it deserves a quick look before closing.

Female and minority percentages of new hires are obviously relevant. These should probably be calculated on a three- or more year basis to smooth annual fluctuations and possible imbalances in recruiting activity among disciplines in a given year.

From applicant data, numbers and percentages of women/minorities receiving interviews and offers are useful for demonstrating good faith effort to recruit women/minorities. Total offers to women/minorities as compared to those accepted may be particularly significant.

Finally, annual comparisons of female/minority new hires by broad discipline with corresponding losses due to resignations,

retirements, etc. show where inroads are being made or ground is being lost. Whether net gains result from increased hiring, low turnover, or both. Whether net losses result from slow hiring, high turnover, or both.

Summary

Although bottom-line numbers and percentages of women and minority faculty tend to dominate discussion of affirmative action in higher education, these numbers are not likely to tell the whole story. This paper encourages a multiple criteria strategy for assessing affirmative action programs. Table 7 lists possible alternative criteria proposed here. Most of the data for these

Table 7

Alternative Criteria for Evaluating Affirmative Action Effectiveness

Average female/minority rank
Average female/minority rank relative to white male average rank
Proportion of women/minorities with tenure
Proportion of women/minorities with tenure relative to white male proportion
Proportion of women/minorities with tenure or tenure-tracked appointments
Proportion of women/minorities with tenure or tenure-tracked appointments relative to white male proportion
Proportion of women/minorities with full-time appointments
Proportion of women/minorities with full-time appointments relative to white male proportion
Number of departments with female/minority representation
Proportion of total departments with female/minority representation
Changes in female/minority representation in selected departments
Proportion of total women faculty outside traditionally female and integrated departments
Aggregate male-female/minority-non-minority salary difference
Average annual salary increase by race/sex
Number and percentage of female/minority new hires
Number and percentage of women/minorities receiving interviews and offers
Annual net gain/loss of women/minorities

criteria should be available from existing faculty data bases, EEO-6 reports, and faculty salary surveys. However, if data must be newly collected and maintained, these efforts may be justified by the value of the criteria in documenting affirmative action effectiveness or in identifying areas of weakness for further evaluation.

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